



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**Applicant:** David C. Morris      **Group Art Unit:** 3745  
**Serial No.:** 09/328,931      **Examiner:** C. Verdier  
**Filed:** 06/09/1999      **Attorney Docket:** MO1.093  
**Title:** HELICOPTER BLADE ASSEMBLY ADAPTED TO PERMIT  
RAPID FORWARD FLIGHT

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DECLARATION UNDER §1.132

I have examined the subject concept and provide the following comments:

10 During rapid forward flight the blade assembly of the invention operates in a different manner from that of a standard helicopter.

The standard helicopter works in such a manner that each rotating blade is at an angle of attack relative to the disc swept by its blades and provides lift.

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In the invention however the blades are not at an angle of attack relative to the disk swept by its blades. However the disc is at an angle of attack with respect to the forward velocity. At sufficiently high rotation rates, air flows over a virtual disk created by the rotation of the blade assembly to create lift. Lift is generated due to the angle of attack of the total disc, not the angle of attack of each blade as with a helicopter.

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Lift will be generated as a function of speed of rotation, angle of attack of the virtual disk and forward speed.

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*Richard H. Miller*

Richard H. Miller

September 3, 2001

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**CERTIFICATE OF MAILING BY FIRST CLASS MAIL (37 CFR 1.8)**Applicant(s): **David C. Morris**

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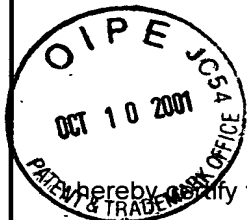
Examiner

**C. Verdier**

Group Art Unit

**3745**

Invention:

**HELICOPTER BLADE ASSEMBLY ADAPTED TO PERMIT RAPID FORWARD FLIGHT**I hereby certify that this **Declaration Under 1.132 signed by Richard H. Miller**

(Identify type of correspondence)

is being deposited with the United States Postal Service as first class mail in an envelope addressed to: The

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